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Interested in surfing the Internet? Agency employees and corporate members of the Library can now search the "network of networks" in the Library's Internet/Computer Services Room. There is a wide array of transportation information in the Internet including sites offered by.the Federal Transit Administration, Federal Highway Administration, and the Federal Aviation Administration. This month's acquisition list features useful addresses for transportation resources on the Internet. The Library is currently providing instruction on the use of the Internet. An agency user or a member of the library can schedule an appointment with a library staff member or stop by the Library and either reserve a time on the Internet or start a search.

## TRANSPORTATION ON THE NET

THE FOLLOWING SITES ARE AVAILABLE ON THE INTERNET:

AERONET INFORMATION
ADDRESS: **//www.aeronet.co.uk**
Includes: online information on aviation industry with links to individual companies and airports

BUREAU OF TRANSPORTATION STATISTICS (BTS) NATIONAL TRANSPORTATION LIBRARY
ADDRESS: **http://www.bts.gov/smart/smart.html**
Includes: text of public regulations issued by federal government

FEDERAL AVIATION ADMINISTRATION
ADDRESS: **http://www.faa.gov**
Includes: news and information, federal advisory circulars, air traffic services, and research and acquisition guidance

FEDERAL AVIATION ADMINISTRATION, WILLIAM J. HUGHES TECHNICAL CENTER
ADDRESS: **http://www.tc.faa.gov**
Includes: FAA Web Sites, FAA Grants, and Hot Topics

FEDERAL HIGHWAY ADMINISTRATION
ADDRESS: **http://www.fhwa.dot.gov**
Includes: What's New, Legislation and Regulations, Procurement, ISTEA Reauthorization

FEDERAL TRANSIT ADMINISTRATION
ADDRESS: **http://www.fta.dot.gov**
Includes: Budget and funding, Intermodalism, Intelligent Transportation Systems, Procurement, and Grants and contracts

PRINCETON UNIVERSITY TRANSPORTATION RESOURCES
ADDRESS: **http://dragon.princeton.edu/~dhb/organizations.html**
Includes: government and quasi-public agencies, museums, professional societies

US DEPARTMENT OF TRANSPORTATION
ADDRESS: **http://www.dot.gov**
Includes: DOT News and Information, Press Releases and Useful Internet Sites

US HOUSE OF REPRESENTATIVES INTERNET LAW LIBRARY
ADDRESS: **http://law.house.gov./**
Includes: federal laws arranged by published source, federal laws arranged by agency, foreign law, house and Senate Documents, legislation, code of federal regulations, and US Code

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# Better Roads.

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EDITED EXCLUSIVELY FOR FEDERAL, STATE, COUNTY, TOWNSHIP, SPECIAL DISTRICT ROAD, AND MUNICIPAL STREET OFFICIALS AND ENGINEERS

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Strong colours distinguish the three main sections of the magazine – airports (red), air traffic control (green) and airport equipment (blue). News pages and features appear in each section, while airport development and the interview page is carried at the back of every edition. The redesign brings into sharper focus the business issues that drive the airport industry. Whether the market faces fresh competition, financial restructuring or tougher technical challenges, *Jane's Airport Review* reports on how it affects your business sector.

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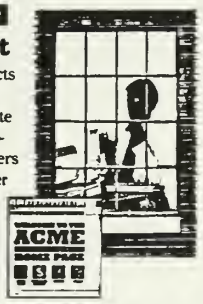



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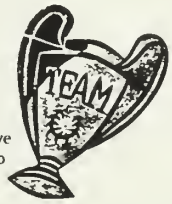



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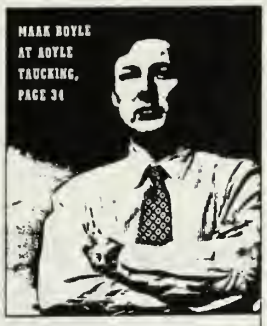
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# GIS WORLD

VOL. 10 NO. 6
JUNE 1997

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Today, more than ever, local governments are tasked to do more with fewer resources. That's why many departments are looking for information technology to help them improve the way they do business. As a result, GIS is playing an increasingly valuable role as a governmental information support system. As illustrated by the features in this issue, GIS and related geographic technologies can affect the government bottom line—organizational performance.

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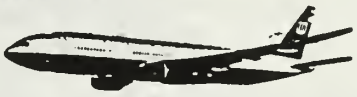

**Jane's Airport Review design**

Strong colours distinguish the three main sections of the magazine – airports (red), air traffic control (green), and airport equipment (blue). You will find news and features in each section, with the interview page and airport development section at the back. Look in your industry section for market intelligence on the issues that drive your business, and the latest news on financial, technical and commercial trends in the market.

☆ **Front cover:** *Aéroports de Paris, Paris-Orly*

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ENGINEERED DESIGN AND CONSTRUCTION

ASCE

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Most GIS professionals have a pile of hard-copy maps they would like to have magically appear in digital form, but converting drawn maps to GIS data layers is a tedious process. Fortunately, as detailed in this month's cover story beginning on page 32, many standalone raster-to-vector conversion products are available that allow organizations to save time and money in building their GIS databases.

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## Cover Highlight

Although the news stories that appear in *GIS WORLD* provide detailed information on current industry events, viewed collectively they help form a much broader picture of the spatial technologies industry as a whole. The *GIS WORLD* staff queried its Editorial Advisory Board on their picks for the most influential news stories since the January 1996 issue and found five significant trends. This month's cover story, beginning on page 34, analyzes these trends and the stories that reflect them.

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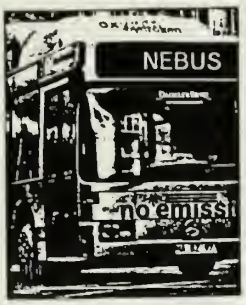


**ENVIRONMENTAL VEHICLES**
***Environmentally-friendly buses are changing the way we're getting around. From the promise of hybrid-electric vehicles (HEVs) performing as well as current diesel buses while having reduced emissions, fuel use and maintenance costs, to CNG and fuel cell buses which are proven to run more efficiently. And since they're eventually going to be in the majority, we're going to have to learn how to live with their special maintenance and safety needs.***


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*Cover portrait by Earl D. Barnett*

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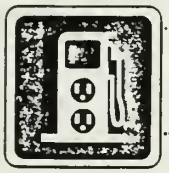
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THE FOLLOWING SITES ARE AVAILABLE ON THE INTERNET:

AAA FOUNDATION FOR TRAFFIC SAFETY HOME PAGE

ADDRESS:**webfirst.com/aaa/**

Promoting research and education designed to prevent traffic crashes, the AAFTS Home Page provides a variety of information on such topics as crashes with animals, pedestrian fatalities and the relationship between cellular phone use and driver attention.

AASHTO

ADDRESS:**www.aashto.org/main/**

This site provides information on the programs, services, and publications of the American Association of State Highway and Transportation Officials. It produces an online version of the AASHTO Journal.

AMERICAN SOCIETY OF CIVIL ENGINEERS

ADDRESS:**www.asce.org/**

This site provides information about ASCE and its activities, members and research.

CYBERSPACE WORLD RAILROAD

ADDRESS:**www.et/~dsdawdy/cyberoad.html**

This site provides a variety of rail-related information including Amtrak schedules, news and links to other Internet resources.

THE DOCKET MANAGEMENT SYSTEM

ADDRESS:**dms.dot.gov**

The Docket is a compilation of information about proposed and final regulations issued by the US Department of Transportation, including public comments on department decisions, legal pleadings, and other documents produced during regulatory or adjudicatory actions.

INTELLIGENT TRANSPORTATION SOCIETY OF AMERICA

ADDRESS:**www.itsa.org/**

The site provides news and information on the development and application of advanced transportation technologies. Some materials are only available to ITS members.

THE INSURANCE INSTITUTE FOR HIGHWAY SAFETY

ADDRESS: **www.hwysafety.org**

Dedicated to reducing the losses resulting from crashes on the highways, the IIHS Home Page provides information on alcohol and drugs and supplies resources for beginning driver and kids. It includes materals on airbags, large trucks, motorcycles, and pedestrians.

MANUAL OF TRAFFIC SIGNS

ADDRESS:**members.aol.com/rcmoeur/signman.html**

This site lists the most commonly used traffic signs in the United States.

THE NQI HOME PAGE

ADDRESS:**www.nqi.org**

Dedicated to continuous quality improvement in the planning, design, construction, and maintenance of the Nation's highways, the NQI HOME PAGE includes links to its member organizations, news, and transportation quality sites.

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# GIS WORLD

VOL. 10 NO. 11
NOVEMBER 1997

## COVER HIGHLIGHT

A scene of Colorado's northern Front Range was rendered in World Construction Set (Questar Productions, Brighton, Colo.), one of several 3-D terrain visualization packages reviewed in this issue, beginning on page 46. The terrain data are stock U.S. Geological Survey 90-meter Digital Elevation Model sets. The foliage is rendered in actual 3-D. World Construction Set can use remotely sensed imagery to guide vegetation placement or use its own ecological gradient modeling algorithms. Specific areas can be defined as to precise vegetative composition.

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## Cover Highlight

A new decade will dawn for *GIS WORLD* magazine in 1998, as the publication celebrates its 10-year anniversary! A lot has changed during the years, considering the remarkable advancements made in GIS and related spatial technologies. Thinking about it made our editorial staff wonder what the next 10 years holds. So we thought this would be a prime opportunity to ask our Editorial Advisory Board members to look into their crystal balls and take their best shot at predicting where the industry will be 10 years from now. Turn to page 40 for their responses in our annual "GIS Industry Outlook."

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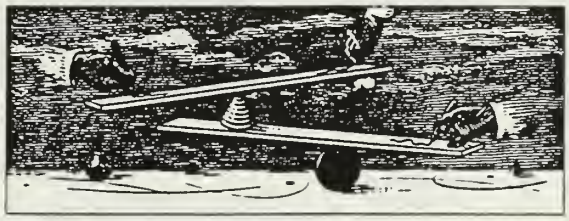


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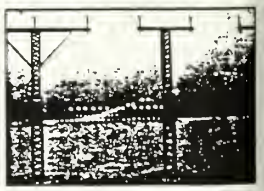

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*"Our troubled planet can no longer afford the luxury of pursuits confined to an ivory tower. Scholarship has to prove its worth, not on its own terms, but by service to the nation and the world."*
*—Oscar Handlin*



February 1998

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COVER PHOTO BY JOHN B. CORNS. INSET PHOTO OF DAVID GOODE COURTESY NORFOLK SOUTHERN

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**Public Transit 1997: Bus, Paratransit, Intermodal and Rail**
Transportation Research Board

# Bus Ride April 1998

Volume 34, Number 4 • Visit us on the World Wide Web at www.busride.com/friend • E-mail: friend@busride.com


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HOW CREATIVE ENGINEERS THINK From Brunel to Eiffel and Whipple, the engineers who thought "across borders" changed the way design and construction is done today. *By Tom F. Peters*

OUT OF SIGHT, OUT OF TIME A 10-year grace period to upgrade older underground storage tanks ends this year, and many owners will need help to beat the clock. *By Wayne Geyer*

POSITIVELY NOT PEDESTRIAN An unorthodox design brings cable-stay technology to a suspension bridge for bicycles and pedestrians in Eugene, Ore. *By Jiri Strasky and Gary Rayor*

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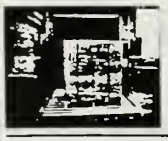

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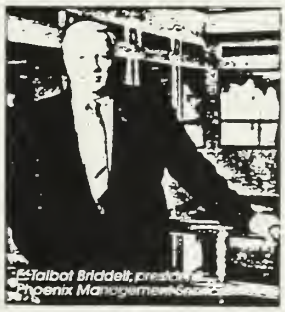


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## On the cover

This issue focuses on small and mid-size buses. Our coverage includes operator profiles and vehicle descriptions. On the cover (top to bottom) are a Metrotrans Classic, Champion Contender, ElDorado National Aerotech and Blue Bird TranShuttle. Coverage begins on page 33.

ENGINEERED DESIGN AND CONSTRUCTION ASCE

JUNE 1998

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American Water Works Association

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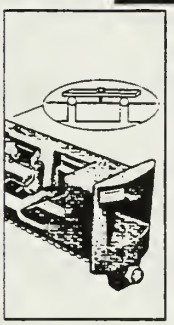

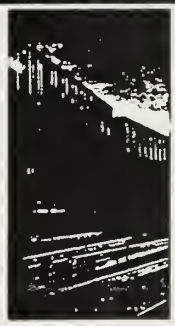

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PREPARING FOR PIER A Before the 170-acre Pier A facility at the port of Long Beach could be built, engineers had to clean up oil and waste contamination and shore up deteriorated soil.
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EXPRESS DESIGN Using design/build allowed engineers to make structural changes to Milwaukee's new convention center without sacrificing the deadline. *By John H. Kissinger* 40

JET GROUTING: NEW DIRECTIONS Jet grouting can be used in soft ground, but it's not always the answer. This article gives a step-by-step guide on how and when to use the method.
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SMOOTHING UP LAKE SHORE DRIVE The $101 million relocation of the northbound lanes Shore Drive in Chicago won a 1998 OCEA Award of Merit for its traffic engineering and planning. *By Brian Fortner*

THE SAN FRANCISCO CONNECTION The carefully planned cut-and-cover and tunneling used to build the San Francisco Municipal Railway's underground turnback facility earn project a 1998 OCEA Award of Merit.

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SALVAGING STREAMS Engineers, government agencies and volunteers used vegetation an eroded stream that runs through a Virginia park. *By Michele C. Monde and Robert Si*

PUTTING WETLANDS TO WORK Natural or man-made wetlands can clean up wastewater particularly downstream from the source of pollution—with less effort and infrastructur than hard technology. *By Scott D. Wallace*

ROCK DAM REVITALIZATION A V dam made of boulders restored a Colorado streamed stability and original appearance. The result? A steadier flow of tourists and wildlife.
*By Doug Laike and Paula A. Fitzgerald*

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GETTING THE GIS OF COSTS Growing into a new role, GIS helped determine whether t benefits of saving a section of the New Jersey shoreline were worth the price.
*By Thomas A. Dean and John Maylie*

STAKING YOUR CLAIM If you can make it, draw it or think of it, someone else can steal i Fortunately, there are tools to help engineers protect their intellectual property.
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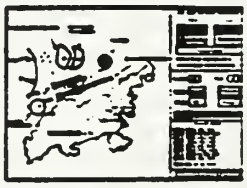

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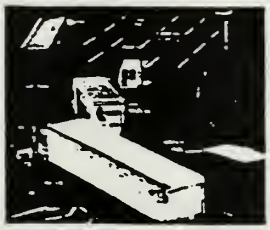

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